

ABSTRACT

A system and method for a software override capability for enforcing a predetermined state for an otherwise hardware-programmable device. Software that may think it knows what it is doing may try to control a hardware device, but may not know about a hardware issue, such as another feature or defect requiring that the device stay in a certain state. The technique programmatically maintains a persistent hardware state independent of any other control software. To other software, the software layer of the invention is indistinguishable and inseparable from hardware. Nothing can slip in between. Any insertion attempt will be detected and disallowed. Features of the processor or system chips actually weld the software to the hardware, which feature disallows any software intervention between the welded software layer and the hardware. Various uses for this method may include making hardware persistently behave in a given fashion, in spite of ongoing attempts from other software to reconfigure the hardware behavior. This may provide a software-only solution to a hardware defect. One may extend hardware capability without replacing hardware, and without concern for insertion of other software layers that would alter states impermissibly if allowed to obtain conventional access, such as I/O port commands, memory-mapped I/O commands. Monitoring capability of access and control of an underlying hardware interface is also available.

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